Abstract

Objective. The use of spirometric reference values specific to the population being tested is preferable. A study carried out in Puerto Rico is used here to develop nomograms for normal children and adolescents based on age and height, two variables that have been found to be good predictors of pulmonary function. Material and methods. The data for healthy individuals aged 5 to 18 were extracted (108 girls and 107 boys) from a larger study of spirometric measurements collected on 4,527 individuals attending medical services in Puerto Rico. Several models were tested for the prediction of FEV₁, FVC and the ratio FEV₁/FVC. The best models were selected for each gender, and nomograms were developed showing the fifth, twenty-fifth, fiftieth, seventy-fifth, and ninety-fifth percentile of the predicted values according to age and height separately. Results. The best models were those using the logarithm of the pulmonary function and the cube of height (R²= 0.79-0.81), and age without transformation (R²= 0.73-0.77). Corresponding nomograms were developed based on these models. The ratio showed little variation for different ages and heights. Conclusions. Pulmonary function can be efficiently predicted by age and height. Nomograms provide a simple way to use spirometric references that can be incorporated to clinical practice.

Keywords

spirometry; children; adolescence; Puerto Rico.